

CALIFORNIA STATE UNIVERSITY SAN MARCOS
COLLEGE OF EDUCATION
EDMS 545 – Elementary Science Education
Spring 2008 – Tuesday 9:00 a.m. – 3:15 p.m.
Alvin Dunn Elementary
3 Units

General Information:

Instructor: Dr. Ingrid M. Flores
Office: University Hall 462
E-mail: iflores@csusm.edu

Office Hours: After class

Other times are also available by appointment, so please feel free to e-mail me to set up a convenient time to meet.

Mission Statement

The mission of the College of Education Community is to collaboratively transform public education by preparing thoughtful educators and advancing professional practices. We are committed to diversity, educational equity, and social justice, exemplified through reflective teaching, life-long learning, innovative research, and ongoing service. Our practices demonstrate a commitment to student-centered education, diversity, collaboration, professionalism, and shared governance.

Required Textbooks:

Friedl A. E. (2005). *Teaching science to children: An inquiry approach*. New York: McGraw-Hill.

California Department of Education (2003). *Science Framework for California Public Schools*. Sacramento, CA: CDE. Also available online.

Other handouts will be distributed in class or through WebCT.

Also Required: Two Large Blue Books

Recommended:

Tippins, D. J. & Koballa, T. R. (2002). *Learning from cases: Unraveling the complexities of elementary science teaching*. Boston, MA: Allyn & Bacon.

Other Good Books:

Great Explorations in Math & Science (G.E.M.S.). Lawrence Hall of Science.
<http://www.lhs.berkeley.edu/GEMS/>

Activities Integrating Math and Science. Aims Education Foundation.
<http://www.aimsedu.org/index.html>

These and many other hands-on science books are in bookstores, museums, zoos, even grocery stores!

COURSE DESCRIPTION

This course is designed to provide a comprehensive overview of the objectives, skills, concepts, experiments, materials, and methods necessary to teach science to elementary school children. A series of team activities will provide you with first-hand experiences in these areas. This course focuses on instructional methods, techniques, materials, lesson planning, curriculum development, organization and assessment in science. The integration of curricular areas is addressed. Methods of cross-cultural language and academic development will be integrated into the course.

COURSE PREREQUISITE:

Admission to the Multiple Subject/CLAD Teacher Credential Program.

COURSE OBJECTIVES

By the end of this course, students should be able to:

1. Demonstrate proficiency with inquiry skills of observing, measuring, inferring, classifying, predicting, verifying predictions, hypothesizing, isolating variables, interpreting data, and experimenting.
2. Identify exemplary materials (curriculum kits, science programs, textbooks, equipment, technology, ancillary materials) appropriate for elementary school children.
3. Demonstrate knowledge and understanding of the California Science Framework, the California Science Content Standards, and the National Science Education Standards.
4. Demonstrate an understanding of the physical, earth and life science concepts included in the K-8 California Science Content Standards, and how to design lessons to teach the concepts.
5. Use the Learning Cycle model of instruction to teach science in a contemporary manner.
6. Use technology in elementary science teaching.
7. Demonstrate confidence in leading and performing investigations designed to teach science concepts, science process skills, and scientific attitudes.
8. Use authentic methods of assessment to evaluate student learning of science concepts and processes.
9. Design an elementary science-teaching mini-unit.
10. Practice strategies to include all students in science (linguistically and culturally diverse, students with disabilities and other students with special needs).

INFUSED COMPETENCIES

Authorization to Teach English Learners

This credential program has been specifically designed to prepare teachers for the diversity of languages often encountered in California public school classrooms. The authorization to teach English learners is met through the infusion of content and experiences within the credential program, as well as additional coursework. Students successfully completing this program receive a credential with authorization to teach English learners.

(Approved by CCTC in SB 2042 Program Standards, August 02))

Special Education

Consistent with the intent to offer a seamless teaching credential in the College of Education, this course will demonstrate the collaborative infusion of special education competencies that reflect inclusive educational practices.

Technology

This course infuses technology competencies to prepare our candidates to use technologies, emphasizing their use in both teaching practice and student learning.

COURSE REQUIREMENTS

COE Attendance Policy

Due to the dynamic and interactive nature of courses in the College of Education, all students are expected to attend all classes and participate actively. Absences and late arrivals/early departures will affect the final grade. At a minimum, students must attend more than 80% of class time, or s/he may not receive a passing grade for the course at the discretion of the instructor. Individual instructors may adopt more stringent attendance requirements. Should the student have extenuating circumstances, s/he should contact the instructor as soon as possible.

For this class, if you are absent 1 day, your highest possible grade is a B. If you are absent more than 1 day, your highest possible grade is a C, which means that you will not pass the course. Late arrivals and early departures will affect your final grade. Absences do not change assignment due dates. If you know you will be absent, please email any due assignments. Late assignments will receive a reduction in points for each day late.

Writing

In keeping with the All-University Writing Requirement, all courses must have a writing component of at least 2,500 words (approximately 10 pages), which can be administered in a variety of ways.

Students with Disabilities Requiring Reasonable Accommodations

Students are approved for services through the Disabled Student Services Office (DSS). This office is located in Craven Hall 5205, and can be contacted by phone at (760) 750-4905, or TTY (760) 750-4909. Students authorized by DSS to receive reasonable accommodations should meet with their instructor during office hours or, in order to ensure confidentiality, in a more private setting.

CSUSM Academic Honesty Policy

“Students will be expected to adhere to standards of academic honesty and integrity, as outlined in the Student Academic Honesty Policy. All written work and oral assignments must be original work. All ideas/materials that are borrowed from other sources must have appropriate references to the original sources. Any quoted material should give credit to the source and be punctuated with quotation marks.

Students are responsible for honest completion of their work including examinations. There will be no tolerance for infractions. If you believe there has been an infraction by someone in the class, please bring it to the instructor’s attention. The instructor reserves the right to discipline any student for academic dishonesty in accordance with the general rules and regulations of the university. Disciplinary action may include the lowering of grades and/or the assignment of a failing grade for an exam, assignment, or the class as a whole.” Incidents of Academic Dishonesty will be reported to the Dean of Students. Sanctions at the University level may include suspension or expulsion from the University.

Plagiarism:

As an educator, it is expected that each student will do his/her own work, and contribute equally to group projects and processes. Plagiarism or cheating is unacceptable under any circumstances. If you are in doubt about whether your work is paraphrased or plagiarized, see the Plagiarism Prevention for Students

website <http://library.csusm.edu/plagiarism/index.html>. If there are questions about academic honesty, please consult the University catalog.

TOPICS OUTLINE

The Nature of Science
The Learning Cycle Model of Teaching
Learning Cycle Science Lesson Demonstrations
Writing Objectives for Student Learning
Writing Science Concept Definitions
CA Science Content Standards Grades K-8
California Science Framework
SDAIE Strategies in Science
Infusing Writing Activities in Science Lessons
Science Curriculum Kits and State Approved Texts
Science Process Skills and Scientific Attitudes
Current Issues in Science Education
Infusing Technology into Science Teaching
Authentic Assessments in Science
Science Projects, Student Research, Science Fairs
Safety in the Science Class
Inclusion and Teaching Science to Students with Special Needs

COURSE ASSIGNMENTS:

1. Reading Journal (Concept Maps and Big Ideas Papers) - 15%
2. California Science Framework and Standards Activity – 10 %
3. Leadership of Hands-on Science Lesson Activities (Group sizes TBD) - 20%
4. Science Exploratorium Lesson Plan/Presentation - 15%
5. Science Teaching Unit and Presentation – 25 %
6. TPE Reflection and Response Via Task Stream – 10 %
7. Active Participation, Collaboration and Professionalism (all or nothing credit) – 5 %

Each student is responsible for ensuring that assignments are submitted correctly and on time. Late assignments will be penalized by a 10 %-point reduction each day they are late, and the latest submission date is by the next class session. WebCT assignments not correctly posted do not count as submitted and will be subjected to the late assignment policy. Keep digital copies of all assignments for your Credential Program Electronic Portfolio. You will not be assigned a course grade unless all the assignments are turned in.

NOTE: The TPE assignment is considered a final exam, and you will not pass the course if the TPE 14 (Technology) assignment is not posted to TaskStream by the due date/time indicated in the course schedule of topics and assignments located in this syllabus.

CRITERIA FOR GRADING ASSIGNMENTS

- A 90-100%: Outstanding work on assignment, excellent syntheses of information and experiences, great insight and application, and excellent writing.
- B 80-89%: Completion of assignment in good form with good syntheses and application of information and experiences; writing is good.
- C 70-79%: Completion of assignment, adequate effort, adequate synthesis of information, and application of information and experiences, writing is adequate.
- D 60-69%: Incomplete assignment, inadequate effort and synthesis of information, writing is less than adequate.

Grades will be determined by points earned:

A = 93-100	C+ = 77-79
A- = 90-92	C = 73-76
B+ = 87-89	C- = 70-72
B = 83-86	D = 60-69
B- = 80-82	F = 0-59

ASSIGNMENT DESCRIPTIONS AND CRITERIA

1. Reading Journal (individual) - 15%

The purpose of the journal entries is to help you carry the science content from short term into long term memory and understanding so that you can more easily teach science when you become a classroom teacher. The assigned readings provide an important foundation for your increasing understanding of how to effectively teach science. You will need two Large Blue Books for this assignment. Reading journals (blue books) will be collected at each class session, and must be turned in by the due date indicated in the course schedule. You must use the pages provided in your Large Blue Books. You have the option of word processing and stapling your entry into the Large Blue Book; spiral paper stuck in Blue Books will not be accepted.

Each class session you will be required to complete journal entries for one chapter (your choice of which chapter from the assigned readings). The first journal entry, which will consist of a Big Ideas Paper for one of the chapter readings assigned for Class Session 2, is due by the start of class time. The Big Ideas Paper consists of explaining the key science concepts for one of the chapters assigned for that week (from whichever chapter you choose). Then for the next week (Session 3), you will create a Concept Map (following procedures taught in class) for one of the assigned chapter readings for that week (your choice of which chapter from the assigned readings). For Class Session 4, you will repeat the process for a Big Ideas paper, and the following week you will repeat the process for the Concept Map. This cycle/schedule will continue up through Session 6.

Every week you will turn in the Blue Book. You will alternate making entries between your Large Blue Books so that while I am grading one, you are writing in the other

- The Concept Map must include ALL major concepts discussed in the chapter. Do not include information from the investigations, only the science content. The Concept Map must follow the Concept Mapping procedures taught in class. Each concept map has a possible total of 9 points.
 - a. Most general, inclusive Concept at top.....worth 1 point
 - b. Map must show hierarchy.....worth 1 point
 - c. All major concepts included.....worth 3 points
 - d. 1-2 words (nouns) for Concepts.....worth 2 points
 - e. Verbs or prepositions for Linking Words between Concepts..worth 2 points
- The Big Ideas paper should explain **ALL** major science concepts (not the investigations) from one chapter reading. Be sure to write in complete sentences, not outlines, though the sentences may be bulleted. Your Big Ideas paper is **not** a reflection of your thoughts; it is a summary of the science content.

Each Big Ideas paper is worth a total of 9 points.

 - a. Complete sentences.....worth 4 points
 - b. Major science concepts included.....worth 5 points

For both Big Ideas Papers and Concept Maps, (a) indicate on each page of your Large Blue Book the title of the Chapter you are outlining, (b) write your name and date at the top of each page and (c) number each page.

2. California Science Framework and Standards – 10% (See schedule for Due dates)

Purpose of the assignment: To read a portion of the California Science Framework and the Standards for a particular grade. You will write your individual response to the readings. Then you will work with your grade level team to prepare and do a presentation to the class. It is essential that you do the reading and the write-ups BEFORE you meet with your team.

3a. Framework summary response: (Individual) – 3%

- Read the first part of the California Science Framework, up to page 22. This includes Board Policy, the Introduction and Chapters One and Two.
 - Think about the reading holistically.
 - Type about one page, in your own words, that answers these questions: What were the most important ideas addressed in the reading? How does science teaching differ from instruction in other subjects? What are the most important elements of a strong science instructional program?
- Come to class prepared to discuss the questions and turn in your responses.

3b. Grade level Science standard response: (Individual) – 3%

- Using the standard for your chosen grade, pick a line item from physical science, life science, and earth science. For each one, come up with a brief description of an activity that children in that grade can do that also addresses one of the Investigation and Experimentation standards for the grade.
- You should end up with three sections, each of which includes a content line (physical, life, or earth science), an Investigation and Experimentation line, and a one or two sentence description of an activity that combines the two. The whole thing should be about a page.
- See example next page.

3c. Team preparation and presentation – (in class with your Team) – 4%

You will be given 30-40 minutes of class time to work with your team.

Get together with your team. Look at the activities that everyone wrote up for Assignment 2b. Choose one activity.

- As a team, write up a lesson plan for the activity (with objectives, assessment, and a brief description of the activity}. Put it on chart paper, or an overhead transparency, or PowerPoint so it can be easily presented to the class. Make sure you quote the line from the standard on which your lesson plan is based.
- As a team, come up with a brief overview of the Science Standards for your grade. Don't try to give us every single line of the standard. Summarize it in such a way that we see generally what students are supposed to learn in physical, earth, and life science and in Investigation and Experimentation in that grade.
- In 8 minutes or less, present your lesson plan and standards choices. Be prepared to explain why your lesson plan represents really good science for kids.
- Your grade for this assignment will be based on the content and quality of your presentation, and on the level of collaboration of the group.

Sample Response to Assignment 3b.

Grade Four

Physical Science

1b. Students know how to build a simple compass and use it to detect magnetic effects, including the Earth's magnetic field

Investigation and Experimentation

6f. Follow a set of written instructions for a scientific investigation.

Activity

Following directions from the Internet, the students will work in partner pairs to build compasses, using paper cups, thread, a needle and a magnet. They will observe and record the action of the compass indoors and outdoors, and in proximity to various objects.

Life Science

2c. Students know decomposers; including many fungi, insects, and microorganisms, recycle matter from dead plants and animals.

Investigation and Experimentation

6c. Formulate and justify predictions based on cause-and-effect relationships.

Activity

The students will predict the growth of mold on bread that has no preservatives. They will observe and record the progress of the mold in various circumstances (if the bread is left in the open air, if the bread is in a closed sandwich bag, etc.)

Earth Science

5c. Students know moving water erodes landforms, reshaping the land by taking it away from some places and depositing it as pebbles, sand, silt, and mud in other places (weathering, transport, and deposition).

Investigation and Experimentation

6b. Measure and estimate the weight, length, or volume of objects.

Activity

In groups of four, students will create landforms (using common dirt) on cookie sheets. They will add measured amounts of water to their landforms, and will collect and measure the dirt that runs off.

3. Leadership of Hands-on Science Lesson Activities (Group sizes TBD) - 20%

(Due on the assigned day for the lesson)

NOTE: These are also called Learning Cycle Lessons.

Purpose of the Assignment: To develop and teach a particular kind of a science inquiry lesson that teaches both science thought processes and science content.

Students will lead hands-on science lessons during class. The lessons should:

- a) model inquiry instruction, use good questioning skills, and be content-understandable.
- b) be based on the CA Science Content Standards.
- c) reflect application of the Learning Cycle
- c) include strategies/methods for teaching English language learners and students with disabilities.
- d) include technology integration.

You will work in groups of 2-3 to lead science lessons based on the Learning Cycle Model of Instruction. You will prepare and teach this lesson to your classmates. Each lesson will be allocated 35 minutes of class time to teach their lesson. Your classmates will not role-play elementary students, but will learn the science content and how to teach it. Treat your classmates as teachers, not elementary students. You may use activities from your course text, Internet, or other science resources.

Each group will be assigned a specific grade level for which you will plan and teach the lesson. This will determine the grade level and California Science Standard your lessons will cover. The group will work together reviewing each other's lesson ideas, sharing resources, and making sure each member presents a different part of the lesson. Collaboration between group members is essential to divide up the work, and support each other.

The lessons should include hands-on lessons, and should emphasize particular science concepts. The Exploration and Application phases of the Learning Cycle require different hands-on science activities using manipulatives. **ALWAYS begin Exploration with students making PREDICTIONS.** Hands-on activities are NOT reading or completing worksheets (though they may require students to read something or complete lab observation sheets). You should take the activities "off of paper" and require students to use the science process skills with science manipulatives. **You need to know and demonstrate the stages of the Learning Cycle, or you will not be given credit for your lesson.**

Be sure you understand the concepts you are emphasizing, and that you can explain them. The lessons should be developmentally appropriate for K-6, and should follow the NSTA Safety Guidelines. **Begin the lesson by writing essential questions about the lesson on the board, for students to consider during the lesson.** These questions should be **higher level questions** (analysis, synthesis or evaluation level) according to Bloom's Taxonomy. Make sure that you include the **3 stages of the Learning Cycle. Begin the lesson with students writing their predictions about the outcomes of the activity.** Make sure that science content background and applications to everyday life are addressed. You need to **EXPLAIN** Strategies for English language learners and adaptations for students with disabilities.

Prepare a PowerPoint Presentation to use in your lesson. The presentation should include a detailed explanation of the science content, as well as a list and definitions of science concepts important to the lesson. Additionally, include a list of at least 5 web sites (with short descriptions) that address the science topic and concepts through simulations, graphics and movies. You should have links to these web sites and show examples during the lesson. **Bring children's literature books to class to show.**

Science Lesson Document

- Prepare a document which includes the information under Lesson Plan Format, making sure you include:
 - team members' names at the top
 - references at the end of the lesson plan.

After teaching the lesson in class, you should each write a one page reflection. The reflection should include strengths, weaknesses, and recommendations for improvement. Each person should turn in the reflection at the next class session, along with a copy of your Peer Evaluation form.

IMPORTANT NOTE: At least **four full days PRIOR to your group's presentation**, email to your instructor (via WebCT) your complete lesson plan and PowerPoint Presentation for the instructor's review. (Failure to email the completed lesson and PowerPoint to the instructor at least 4 days prior to your presentation will **count 10 points off your grade for this assignment.**) Include in your email, your cohort name/number, and the date you will present to the class. After I have approved your lesson plan and you make any needed/suggested revisions, you should make copies of the lesson to bring for classmates on the day of the presentation. You may also email your approved lesson plan to classmates if you are able to do so at least 2 days prior to the lesson presentation. However, please bring a few copies to class for students who may forget to bring them. On the day of your presentation, please provide a hard copy of your lesson plan to your instructor.

After your presentation (by the next class), turn in your **Reflection.**

Lesson Plan Format

Lesson Title: What is the title of your lesson?

Grade Level: What is the grade level?

Student Groupings: How will you group students for instruction?

Materials/Resources/Technology: What does the teacher need? What do the students need?

California Science Content Standard(s): What standards are addressed? Include at least one science area (life science, physical science, or earth science) standard and one investigation standard.

Lesson Objective(s): What do you want students to be able to do?

Write in complete sentences. Use an action verb and explain how students will demonstrate their new knowledge and understanding. "The students will _____."

Science Concept(s): What are you trying to teach (at least one well-developed paragraph)? Do not say "The students will ____." (That is an objective, not a concept.)

Essential Questions (higher level; see Bloom's taxonomy): What are your essential question(s) for this concept? What leads to the big idea? What is it that students should be able to answer by having successfully participated in your lesson? Ensure that these are not lower level fact or information questions.

Assessment: How will your students demonstrate that they have met the objective(s)? What evidence demonstrates that they have achieved the objective?

Criteria for Assessment: What criteria will you use to grade the assessment? How will you know if someone has successfully completed the assessment?

Lesson Procedures: Explain the procedures for each part of your lesson. Include what the teacher will do and what the students will do.

The Learning Cycle

- a. Exploration - Begin with students making predictions, then have a hands-on SCIENCE activity.
- b. Concept Invention - Make sure students share and discuss data and ideas (gathered in the exploration phase) in the first part of the concept invention stage; then teacher introduces new terms and provides further explanations.
- c. Concept Application - Should be a 2nd hands-on SCIENCE activity.

Accommodations/Adaptations/Applications:

- Strategies for English language learners and explanations (at least 3)
- Adaptations for students with disabilities and explanations (at least 3)
- Applications to everyday life and explanations (at least 3)

Science Content Background: At least a 1-2 page summary of the content background

Web Sites: 3 interactive relevant web sites with descriptions

Children's Literature Books: Title, author, publisher, year of two (2) children's books on the topic

BRING BOOKS TO CLASS

References: Title, author, publisher, year

4. Science Exploratorium Lesson Plan/Presentation (2-3 group members) - 15%

You will prepare a hands-on science inquiry activity and poster for elementary students reflecting a discrepant event that leads to a science concept. You will work in small groups (2-3) as assigned in class. You will present the lesson at our Elementary School Science Fair Exploratorium. Prior to teaching the lesson, turn it in to your instructor for review. The activity should be developmentally appropriate, and should follow the NSTA Safety Guidelines. Be sure you understand the concept(s) you are emphasizing, and that you can explain them. The lessons should include hands-on tasks, and should emphasize particular science concepts. The activity should allow students to explore and then you will explain the concept(s) behind the activity. On the day of the fair, you will do the activity repeatedly (about 10 times) to groups of about 7 students.

The Exploration and Application phases of the Learning Cycle must require different hands-on science activities using manipulatives. Hands-on activities are NOT reading or completing worksheets (though they may require students to read something or complete lab observation sheets). You should take the activities “off of paper” and require students to use the science process skills with science manipulatives.)

Type out an abbreviated Lesson Plan with your names at the top and REFERENCES at the end of the lesson plan. Prior to the Exploratorium, turn in the completed Self-Evaluation Rubric.

Science Exploratorium Lesson Plan Format

1. Lesson Title
2. 1-3 Behavioral Objectives- What do you want students to be able to do?
Write in complete sentences. Use an action verb and explain how students will demonstrate their new knowledge and understanding. “The students will _____.”
3. Science Concept (and definition) you are teaching. Write it out in a complete sentence. Do not say “The students will ____.” (That is an objective, not a science concept.)
4. Essential Questions (reflect the concept you are trying to teach)
5. California Science Content Standards addressed
6. Materials/Resources/Technology: What does the teacher need? What do the students need?
7. Lesson Procedures: BRIEFLY explain the procedures to be used-what the teacher and students will do.
8. Learning Cycle
 - a. Exploration Activity- students begin with making predictions, then engage in a hands-on SCIENCE activity
 - b. Concept Invention – students share exploration findings, then teacher introduces new terms and provides further explanations.
 - c. Concept Application Activity –should be a 2nd hands-on Science activity
9. References – title, author, publisher, year of resources

After the Exploratorium, you will do a self-assessment by completing a reflection. Turn in your reflection at the next class session.

10. Your reflection should discuss the following):
 - a. How did the children respond? (What did they say and do?)
 - b. How do the children’s actions and responses demonstrate their level of understanding?
 - c. How did you (or can you) improve upon your lesson to facilitate understanding?

5. Science Teaching Unit and Presentation – 25%

The goal of this assignment is for the student to develop long term planning for instruction as well as developing skill for integrated teaching in the elementary grades. For this assignment, you will plan a unit of instruction for an appropriate grade for an interdisciplinary team that includes science and other subject areas as desired. This unit will be appropriate for approximately 3 weeks of instruction for a heterogeneous elementary classroom. You will work with one or two partners of your choosing.

Indepth details of this assignment will be shared in class and posted to WebCT. Please pay attention to the description when completing this assignment.

6. TPE Reflection and Response Via Task Stream – 10 %

Standards of Quality and Effectiveness for Professional Teacher Preparation Programs California Commission on Teacher Credentialing

This course is designed to help those seeking a Multiple Subjects Credential develop the skills, knowledge and attitudes necessary to assist schools and districts in implementing effective programs for all students. The successful candidate will be able to merge theory and practice in order to realize a comprehensive and extensive educational program for all students. Students will document their knowledge and understanding of TPE 14 through assignments completed in EDMS 545. You will be using assignments and tasks from this course as the basis for meeting competencies in TPE 14 for use in the electronic portfolio. These will be indicated to you in class.

*** NOTE: A completed TPE 14 response is due the last class session as a final exam. You should prepare to post your final TPE response and the required artifact by the last class session no later than 5 pm.

NOTE!!!

If you do not post TPE 14 as directed, (1) you will not receive credit for TPE 14 and (2) you will not pass this course.

TPE 14: Technology in Teaching and Learning

Candidates for the teaching credential meeting the National Educational Technology Standards for Teachers.

- I. Technology Operations and Concepts--- Candidates demonstrate a sound understanding of technology operations and concepts.
- II. Planning and Designing Learning Environments and Experiences.
Candidates plan and design effective learning environments and experiences supported by technology
- III. Teaching, Learning and the Curriculum. --- Candidates implement curriculum plans that include methods and strategies for applying technology to maximize student learning.
- IV. Assessment and Evaluation. --- Candidates apply technology to facilitate a variety of effective assessment and evaluation strategies.
- V. Productivity and Professional Practice. --- Candidates use technology to enhance their productivity and professional practice.
- VI. Social, Ethical, Legal and Human Issues. ---Candidates understand the social, ethical, legal, and human issues surrounding the use of technology in PK-12 schools and apply those principles in practice.

TASK FOR TPE 14 (Individual)

You will begin to work on this task before class time on March 4, 2008. Please bring your completed work to class on March 4 so that I can review/assess your work during computer time on this day.

- Select one existing lesson from your integrated curriculum science unit.
- You will integrate technology in your selected lesson by providing opportunities for your students to use technology to support their learning during the selected lesson.
- The following questions should frame your planning:
 1. How will you organize and manage the learning/classroom environment so that ALL students have access to the technology they will use in your lesson?
 2. How will you assess whether or not your students have reached the intended learning objectives of your lesson?
 3. How will you assess whether or not the technology that students used helped them to reach your learning objectives?
- In your lesson plan, create a category called “Integration of Technology” and describe in **full detail** all procedures for this aspect of your lesson.

Suggestions for integrating student use of technology are:

- PowerPoint based presentations by students
- Kidspiration or Inspiration software for concept mapping activities
- Kidpix software for students to graphically/visually represent their learning
- Students use video technology
- Students use digital cameras
- Creating a Filamentality hot list for students to use during a research activity you plan for them- the list must relate to your lesson content.
- A student-created Filamentality hot list on a given topic related to your lesson content.
- Interactive Web sites you select for students to use (you must provide and explain at least 5 examples of such sites connected to your lesson content and learning objectives.
- Another idea of your own choosing for technology integration.

7. Active Participation, Collaboration and Professionalism (all or nothing credit) – 5 %

Teacher education is a professional preparation program and students will be expected to adhere to standards of dependability, professionalism, and academic honesty (refer to rubric attached to this syllabus).

Grading will include a component of “professional demeanor.” Students will conduct themselves in ways that are generally expected of those who are entering the education profession, including the following:

- On-time arrival to all class sessions and attendance for the entire class period
- Advance preparation of readings and timely submission of assignments
- A positive attitude at all times
- Active participation in all class discussions and activities
- Respectful interactions with the instructor and other students in all settings
- Carefully considered, culturally aware approaches to solution-finding

Class Discussions and Participation: Students will engage in active learning each class session, and will be expected to actively participate. You may lose points for lack of participation based on the following criteria:

- Do you participate in class discussions productively, sharing your knowledge and understandings?
- Do you interact productively with your peers, taking on a variety of roles (leader, follower, etc.)?
- Do you contribute appropriately to group work—do you “do your share”?
- Are you able to accept others’ opinions?
- Are you supportive of others’ ideas?
- Do you support your peers during their presentations?
- Can you monitor and adjust your participation to allow for others’ ideas as well as your own to be heard?

Community Building - Sharing Roles (Directors Role): Extra Credit

In the spirit of giving ownership of the class community to the students, the class determines and takes control of the various activities they would want done in class. Each student will take on leadership roles as Directors of one of the class activities. Some class leadership roles include:

- Director of Directors – Assigns Directorships – keeps list
- Name Tags Director – Make sure everybody has a name tag each class
- Contact Information/Community affairs Director—Make class list with current contact info & Keep records of class events such birthdays etc
- Syllabus and Assignments Director – Coordinates assignments due dates making sure everyone is informed
- Assignments Directors
 - Attendance
- Photographer – takes photos of various class activities. Shows them to class.
- Webmaster – Find science/science ed websites coordinate, WebCT tasks – present to class
- Time Keeper – Keep time for allocated tasks and presentations and breaks
- Environmental Directors – Ensures tightness of the room after class as well as environmental related issues
- Science & Education News – Collects and shares science news from various resources with class –videos, news clips etc
- Noise Control

EDMS 545 Spring 2008 Tentative Topics Schedule

Session Date	Topic	Chapter Readings
1/22/08	~ Course Overview: What is Science? What makes a good science teacher? ~ How do we make decisions about what to teach and the best processes to teach it ? ~ The Nature of Science and Inquiry Processes in Science ~ Review Syllabus - Bring Syllabus to class ~ Sign up for <ul style="list-style-type: none"> • Framework and Standards Tasks Groups (2 or 3 per group) • Learning Cycle Hands-on Science Lessons Groups (2 or 3 per group) • Science Curriculum Unit Groups (3 per group) ~ Inquiry Processes in Science & The Learning Cycle for Inquiry-based lessons ~ Hands-on activities ~ Introduction to Science Education Content Standards: Bring to all classes ~ Introduction to Concept Mapping ~ Big Ideas Paper Discussion ~ Read Learning Cycle Handout on WebCT	Chapters 1, 2, 3 as a framework for course concepts
1/29/08	~ CA Science Framework and Standards: What themes do we use as a framework to decide what science students should learn? ~ Standards Tasks I, II, and III (Class Presentations for III): ~ Understanding The Learning Cycle: Sequencing Instruction to Ensure Participation of ALL students ~ The Learning Cycle Application: Instructor-Led Hands-On Science Activity ~ What teaching strategies ensure participation of ALL students? ~ Writing Learning Objectives in Science Lesson Planning ~ Assessing Understanding & Student Outcomes in Science Learning ~ Science Unit discussion: Planning & Integrating Other Content Areas (if time) ~ Tasks I, II, and III due	Chapters 4, 5, 6 Big Ideas Paper for Ch 4 OR Ch 5 OR Ch 6 due
2/05/06	Introduction to Science Kits and Resources for Science Teaching: Making Science Content Accessible to ALL students ~ Group Work on Learning Cycle Lessons ~ Science Unit Discussion: Planning and Integrating Other Content Areas ~ Teaching Strategies: Instructor-Led Hands-On Science Activity ~ Standards Tasks II and III final version due-Post to WebCT ~ Learning Cycle Lesson Plan due for Teams 1, 2, 3, and 4 by Feb 8 – Post to WebCT by 5PM	Chapters 7, 8, 9 Concept Map for Ch 7 OR Ch 8 OR Ch 9 due
2/12/08	~ Safety in Elementary Science Classrooms ~ Teaching Strategies: Instructor-Led Hands-On Science Activity ~ Group Work on Integrated Science Unit ~ Learning Cycle Lesson Presentations (Teams 1, 2, 3, and 4) ~ Learning Cycle Lesson Plan due for Teams 5, 6, 7, and 8 due by Feb 15 – Post to WebCT by 5 PM	Chap. 11, 12, 13 Big Ideas Paper for Ch 11 OR Ch 12 OR Ch 13 due
2/19/08	~ Science Fairs and the Inquiry Model ~ Science Fair Lesson Plan Group Work – LP due 2/26/08 by start of class ~ Teaching Strategies: Instructor-Led Hands-On Science Activity ~ Group Work on Integrated Science Unit ~ Learning Cycle Lesson Presentation (Teams 5, 6, 7, and 8) ~ Learning Cycle Lesson Plan due for Teams 9, 10, 11, and 12 by Feb 22 - Post to WebCT by 5 PM	Chap. 14, 15, 16 Concept Map for Ch 14 OR Ch 15 OR Ch 16 due
2/26/08	~ Adapting Science curriculum for children with Special Needs ~ Technology in Science Teaching and Learning ~ Teaching Strategies: Instructor-Led Hands-On Science Activity ~ Group Work on Integrated Science Unit ~ Learning Cycle Lesson Presentation (Teams 9, 10, 11 and 12) ~ Begin Draft on Reflective Responses for TPE 14 to bring 3/04/07 (Session 7)	Chap. 18, 19, 21 Big Ideas Paper for Ch 18 OR Ch 19 OR Ch 21 due

3/04/08	<p>~ Computer Lab Time Review of Reflective Response Draft and Artifact for TPE 14 (Technology) Bring Integrated Science Unit to work on.</p> <p>~ Science Exploratorium Presentations – Tentative Date Alvin Dunn Elementary</p>	
3/11/08	<p>Last Day of Classes – ~ Unit Plan Presentations ~ Contemporary Issues in Science Education</p> <p>Unit Plans Due – Turn in one hard copy to instructor AND post to WebCT By 5 PM</p> <p>Last Day to Post TPE 14 Reflective Response (with artifact) to TaskStream – by 5 PM</p>	

SB 2042 - AUTHORIZATION TO TEACH ENGLISH LEARNERS COMPETENCIES

PART 1: LANGUAGE STRUCTURE AND FIRST- AND SECOND-LANGUAGE DEVELOPMENT	PART 2: METHODOLOGY OF BILINGUAL, ENGLISH LANGUAGE DEVELOPMENT, AND CONTENT INSTRUCTION	PART 3: CULTURE AND CULTURAL DIVERSITY
I. Language Structure and Use: Universals and Differences (including the structure of English)	I. Theories and Methods of Bilingual Education	I. The Nature of Culture
A. The sound systems of language (phonology)	A. Foundations	A. Definitions of culture
B. Word formation (morphology)	B. Organizational models: What works for whom?	B. Perceptions of culture
C. Syntax	C. Instructional strategies	C. Intra-group differences (e.g., ethnicity, race, generations, and micro-cultures)
D. Word meaning (semantics)	II. Theories and Methods for Instruction In and Through English	D. Physical geography and its effects on culture
E. Language in context	A. Teacher delivery for <u>both</u> English language development <u>and</u> content instruction	E. Cultural congruence
F. Written discourse	B. Approaches with a focus on English language development	II. Manifestations of Culture: Learning About Students
G. Oral discourse	C. Approaches with a focus on content area instruction (specially designed academic instruction delivered in English)	A. What teachers should learn about their students
H. Nonverbal communication	D. Working with paraprofessionals	B. How teachers can learn about their students
I. Language Change		C. How teachers can use what they learn about their students (culturally responsive pedagogy)
II. Theories and Factors in First- and Second-Language Development	III. Language and Content Area Assessment	III. Cultural Contact
A. Historical and current theories and models of language analysis that have implications for second-language development and pedagogy	A. Purpose	A. Concepts of cultural contact
B. Psychological factors affecting first- and second-language development	B. Methods	B. Stages of individual cultural contact
C. Socio-cultural factors affecting first- and second-language development	C. State mandates	C. The dynamics of prejudice
D. Pedagogical factors affecting first- and second-language development	D. Limitations of assessment	D. Strategies for conflict resolution
E. Political factors affecting first- and second- language development	E. Technical concepts	IV. Cultural Diversity in U.S. and CA.
		A. Historical perspectives
		B. Demography
		C. Migration and immigration

PCP Rubric: Participation, Collaboration and Professionalism

Students are expected to actively participate, collaborate, and demonstrate professionalism at all times.

	Excellent	Acceptable	Unacceptable	Comments
<p><u>Attitude</u> Do you show a positive attitude toward class, “the work” and learning?</p>	Always displays a positive attitude. May offer constructive criticism and include alternatives that show initiative.	Sometimes displays a positive attitude. May offer constructive criticism and include alternatives that show initiative.	Seldom has a positive attitude. Often is critical. Does not offer alternative solutions to criticism.	
<p><u>Participation</u> Do you participate in class discussions productively, sharing your knowledge and understandings?</p>	Attends every class, always on time and well prepared, and never leaves early. Gives closest attention to class activities & speakers.	Attends every class, on time and prepared, and never leaves early. Gives most attention to class activities and speakers.	Is not always ready when class time begins. Doesn't give full attention in class; sometimes talks when others are speaking.	
<p><u>Professionalism</u> Do you exhibit professional behavior at all times?</p>	Consistently behaves, talks and works in a professional manner, regardless of task/topic.	Most of the time, behaves, talks and works in a professional manner, regardless of task/topic.	Seldom behaves, talks, and works in a professional manner, regardless of task/topic.	
<p><u>Collaboration</u> Can you monitor and adjust your participation to allow for others' ideas to be heard? Are you supportive of others' ideas and work?</p>	Consistently listens to, shares with, and supports the efforts of others. Tries to keep people working well together.	Most of the time listens to, shares with, and supports the efforts of others, but sometimes is not a good team member.	Rarely listens to, shares with, and supports the efforts of others. Is not always a good team player.	
<p><u>Contributions</u> Do you contribute to whole class and group work? Do you “do your share”?</p>	Consistently provides useful ideas; always stays focused on the task. Exhibits a lot of effort and valuable contributions.	Most of the time provides useful ideas and stays focused. A satisfactory group member who does what is required.	Rarely provides useful ideas; not always focused. Reluctant to participate. Lets others take charge.	
<p><u>Disposition toward teaching</u> Do you exhibit a positive disposition towards teaching all students?</p>	Consistently demonstrates concern in learning to teach all children. Always demonstrates strong commitment toward developing (a) an understanding of children, (b) teaching strategies, and (c) knowledge of the CA Standards for the Teaching Profession (CSTP), Teacher Performance Expectations (TPE), and CA Standards.	Most of the time demonstrates concern in learning to teach all children. Often demonstrates commitment toward developing (a) an understanding of children, (b) teaching strategies, and (c) knowledge of the CSTP's, TPE's, and CA Content Standards.	Rarely shows concern in learning to teach all children. Rarely demonstrates commitment toward developing (a) an understanding of children, (b) teaching strategies, and (c) knowledge of the CSTP's, TPE's, and CA Content Standards.	
<p><u>Leadership</u> Do you interact productively with your peers and show leadership initiative?</p>	Shows strength through leadership in class activities; other students respect you as a leader.	Effectively participates and contributes, but rarely shows leadership qualities.	Does not show leadership in any area of class.	